DOCUMENT RESUME

ED 444 515 IR 020 171

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TITLE Web-Based Student Portfolios in a Graduate Instructional Technology Program.
PUB DATE 2000-00-00
NOTE 6p.; In: Society for Information Technology & Teacher Education International Conference: Proceedings of SITE 2000 (11th, San Diego, California, February 8-12, 2000). Volumes 1-3; see IR 020 112.
PUB TYPE Reports - Descriptive (141) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Computer Uses in Education; *Educational Technology; Graduate Study; Higher Education; *Portfolio Assessment; *Student Evaluation; Teacher Education; World Wide Web
IDENTIFIERS *Electronic Portfolios; University of Houston TX

ABSTRACT

This paper summarizes plans to implement portfolio assessment for graduate students in the Instructional Technology program in the College of Education at the University of Houston (Texas). Specific advantages of portfolios, and electronic and World Wide Web formats in particular, hold promise for the development and assessment of the student population. The goals for implementation are outlined, including a plan for informational seminars, criteria for item selection, portfolio components, anticipated barriers, and the role that portfolios are intended to play in the student graduation process. Contains 14 references. (Author/MES)

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Web-Based Student Portfolios in a Graduate Instructional Technology Program

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Abstract: This paper summarizes our initial plans to implement portfolio assessment for graduate students in our Instructional Technology (IT) program. Specific advantages of portfolios, and electronic and Web formats in particular, hold promise for the development and assessment of our student population. We outline the goals we have for implementation that include a plan for informational seminars, criteria for item selection, portfolio components, anticipated barriers, and the role we intend portfolios to play in the graduation process of our students.

Introduction

Performance-based portfolios are gaining acceptance as a viable alternative form of assessment in educational settings. Teacher education programs, in particular, have found portfolios to be an elastic assessment format capable of addressing criteria not a part of traditional assessments, such as continuous student reflection, individual assessment of growth and change, iterative evaluation of learning goals, and the contextual examination of created products in relation to complex teaching processes (Barton & Collins, 1993; Guillaume & Yopp, 1995; Levin, 1996; Richards, 1998; Snyder, Lippincott, & Bower, 1998; Wade & Yarbrough, 1996). Portfolio assessment allows for the development of pedagogy and discipline-oriented philosophy (Carroll, Potthoff, & Huber, 1996), as well as the evolution and expression of a professional voice (McKinney, 1998). The distinct advantage of portfolios that appeals most to us, as faculty in an Instructional Technology program, is that the ownership of learning and product production shifts away from the teacher (Wiggins, 1989). Instead it reflects a jointly negotiated process, reached by the teacher and the student, that entails detailed discussions and customized evaluation of learning. In compiling a portfolio, the student selects multiple samples of work for the purpose of demonstrating personal competence in various facets of learning required by the program.

In an Instructional Technology (IT) program, essentially all artifacts of learning, whether products that demonstrate skill or reflection, are by definition *digital* products. Thus, we assert that as a storage and display medium, electronic portfolios in particular would provide a natural solution to representing student learning in Instructional Technology. Philosophically, we adhere to the notions of constructivism, and with regards to the assessment of digital products, we subscribe specifically to "constructivism" as expressed by Resnick (1998) as the idea that people construct new knowledge with particular effectiveness when they are engaged in constructing personally-meaningful products. We argue that the processes of learning, implementation, and production common in IT programs can be best represented through the use of digital portfolios. Further, the emergence of the Web as a predominant learning environment in education and business led us to consider this particular medium as the portal to student portfolios. The Web format encourages individuality by allowing students to demonstrate creativity in presentation and organization, to create multiple design formats for multiple audiences (Watkins, 1996), and to easily establish connections

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among related portfolio components (McKinney, 1998). The Web, as both a technology and an interface, enables the student ultimate control in assembling and ease of re-organizing, as well as the ability to integrate narrative captions among the learning evidence to emphasize the interrelated nature of the learning (Watkins, 1996). The Web environment permits students the flexibility to maintain their portfolios in a Web-space that can be remotely accessed from anywhere at any time, by the student, faculty, peers, and potential employers. Finally, Web-based portfolios promote seamless access to student work by eliminating software and platform incompatibilities encountered when viewing electronic portfolios created with multiple authoring tools (Mills, 1997).

Our Context

The Instructional Technology program in the College of Education at the University of Houston offers both Masters and Doctoral degrees to primarily part-time, commuting students who hold full-time jobs in both education and industry. Assessment strategies currently vary among our courses depending on the course content, structure, and individual instructor preference. Digital design and multimedia projects are typically submitted on disk or uploaded to a specific course server location, while traditional reports and papers are turned in either electronically or on paper. As students progress through our program, we currently have no consistent standard for collecting and comparing the work they produce in separate courses, therefore there is no easy way to draw any type of comparisons of program-wide effectiveness.

While much of the literature on the use of portfolios describes implementation within preservice teacher education, our faculty sees the promise of a portfolio assessment strategy for our graduate program, for many of the same reasons. First and foremost, we value and encourage student ownership of learning, and we see the compilation of portfolios as the ideal instrument to coach students to observe and manage their own learning progress. We believe we can use portfolios to accomplish this goal not only because their creation helps make explicit the connections among seemingly discrete but realistically related courses, but also because portfolios will assist our students in valuing the course projects in relation to our larger program goals. We want to eliminate the prevalent idea that course products are produced in isolation merely to get a grade, destined only to collect dust on faculty shelves. Portfolios would allow our faculty the opportunity for more meaningful and interactive feedback to guide our students toward learning goals, dialogue which would ultimately allow students to originate and hone their individual professional voices within the diverse IT field.

We see Web-based portfolios, in particular, as the most versatile format for incorporating the multiple projects that our students produce using a variety of software. A key advantage for our commuting, and frequently telecommuting, population of students and faculty, is that Web-based portfolios could be revised and assessed from any computer at any time. We envision portfolio assessment as initially supplementing, and potentially replacing, our written comprehensive exams as a graduation requirement. Such a change would better reflect our constructivist teaching and learning philosophy, as well as the project-based nature of our program. Finally, we look forward to the ongoing feedback on the effectiveness of our program that portfolios would provide our faculty (McKinney, 1998; Snyder, Lippincott, & Bower, 1998). Such feedback, we believe, could directly feed the continuous improvement and development of our program.

Digital portfolios for our IT program seem to be the natural format whose time has come, both for our students and for us. Other plans we are considering for portfolios include capturing the work examples to provide our students with examples of exemplary models produced by their peers and archiving these products in an organization scheme that benefits the larger education community. The driving force behind our interest in portfolios, however, is the progressive and comprehensive review of the projects, process, and learning across courses and throughout the entire experience of the student in the program.

Initial Plans for Incorporating Portfolio Assessment

In planning for a portfolio strategy in the IT program, we began by asking questions relating to the nature of the knowledge, application, and synthesis level skills that students will encounter in the program. What information do we want students graduating from the IT program to know, and what skills should they be able to demonstrate? What kinds of evidence will verify that the information and skills have been

learned? How effective is our program at preparing future instructional technologists, and what could we do differently to give our students an even more meaningful preparation in instructional technology? These questions are aligned with portfolio development criteria discussed by others (Barton & Collins, 1993; Georgi & Crowe, 1998; Snyder, Lippincott, & Bower, 1998).

With those over-arching questions in mind, our portfolio process will begin with a, required seminar at the beginning of the semester for entering Masters-seeking students, allowing ample time to assimilate the concept of using portfolios before courses have begun (Stone, 1998). In this seminar, we will orient students to the ideas of "digital portfolios," articulate flexible criteria that will provide guidelines for the individual portfolio requirements, and enable them to think of the program and the learning process as one that is evaluated by more than the individual instructor. By presenting these criteria in the form of organized rubrics, students will be made aware of expectations we have for the demonstration of proficiency and skill, thus de-mystifying the evaluation process and allowing students to take an early and active role in the planning for and management of their own learning during the course of the program.

Instruction on technical considerations and style guidelines for the Web-based portfolio will be presented in an effort to ensure ease of accessibility of student work throughout the graduate experience. Upon entering our program, each student will be given permanent disk-space on the department server to be used for the duration of their studies. To assist with the details of file-management, we will establish a consistent hierarchy of file organization within each student's Web index that is based on our course numbering system. Sufficient hands-on time for practicing such procedures as file transfer and organization will be given at the seminar so that students walk away with a clear understanding of portfolio maintenance basics.

The seminar will conclude by addressing the actual work of compiling portfolio components. Substantial time will be spent demonstrating strategies for selecting portfolio items to represent a range of work quality and type, with a focus on ethnographic methods of collecting and analyzing data. By addressing portfolios with specific research and analysis methods, we will empower each student with the skills necessary to use the data to develop an individual theory of instructional technology as it relates to his or her own learning artifacts (Snyder, Lippincott, & Bower, 1998). Specific examples will be given to students to illustrate the process of authoring reflections on their work, or "sustained hard personal looks at oneself and one's practice" (p. 54). Final thoughts in this first seminar will involve establishing the focus of each student's portfolio through the writing of an individual goal statement.

Once established, the portfolio procedures will be regularly reinforced throughout the individual courses in the IT program, allowing us to design and adhere to standard policy and a consistent technical format for all of the various courses. We anticipate that this advanced and sustained attention to the portfolio construction, maintenance, and presentation will contribute to the overall success of the evaluation procedure.

The Balance among Utility, Reflection, and Creativity

Our IT portfolios will be useful only if they transcend a merely pleasing display of completed work to instead make compelling arguments of each student's knowledge and skill. At the same time, we hope that the portfolios will highlight interrelations among instructional theory, research, and practice, both intended and serendipitous, as evidenced in the products of learning and the ability of each student to articulate these ideas.

Despite our intention to provide a consistent overriding portfolio framework, we do not believe that the requirements of included work should be entirely prescribed. Such demands for conformity would counter our goals of reflection, individuality, and customized feedback, and might, in fact, preclude student creativity and individuality, thus resulting in artificially similar products from all students (Mills, 1997). Like others (Scanlan & Heiden, 1996; Snyder, Lippincott, & Bower, 1998), we recognize the need for a convergence of perspectives in the design of our portfolio process so that our portfolios can be useful for both summative purposes and individual student reflection. Therefore, we will strive for a balance between student-selected items chosen to illustrate personal learning and items suggested by the faculty to demonstrate learning in accordance with program goals. Consideration of item selection will be encouraged regularly at the conclusion of each semester, and items previously selected may be re-evaluated in comparison with newer projects. Students will compose narrative captions to rationalize the inclusion of each item in the portfolio, thus constructing a unique comparative thread linking skills and projects.

Student-written captions will enable faculty to evaluate learning products with the students' voices articulating the reasoning behind projects (Barton & Collins, 1993). In addition to formal narratives, students will have the opportunity to include personal reflections about the progress toward attaining their learning goals.

Considered along with the selected work examples and various written commentaries, the Web interface and navigational sequence will serve as the ultimate demonstration of creative design and systematic development expected of IT graduates. The final portfolio component will be a summative "epilogue" written by each student to bring closure to his or her graduate experience. This culminating document will address questions specifically posed by the faculty that are intended to guide the student to synthesize his or her understanding of theory and practice.

Successful completion of the portfolio process in our program will be marked by a "portfolio consultation" to occur during the last semester of the student's program and involve the participation of peers and faculty advisors. Consultations will take the tone of a collaborative forum, a collective "think tank" of instructional technology issues led by the portfolio author, as opposed to the generally one-sided, directed nature of an academic inquisition, a hurdle commonly seen as part of a graduation defense. This collegial approach will allow us to further capitalize on the portfolio as a tool for the continued growth of both students and faculty. Such examination of learning evidence and subsequent reflection, we argue, is not possible in our existing traditional written comprehensive exam format (Bali, Wright, & Foster, 1997; Barton & Collins, 1993).

Challenges and Future Directions for Portfolios

As our portfolio evaluation process matures, we foresee related research investigations, such as examining the impact of portfolio development on student learning and reflection, the benefits of increased student and faculty collaboration, the extent to which portfolios allow us to assess the validity of course objectives, and the role of the information gained through the process on ongoing improvement of course-to-program goal alignment. For now, portfolio assessment is scheduled to commence in our Instruction Technology program with the incoming Master's students in the Spring semester of 2000. We understand, however, that the best-laid plans will not ensure flawless implementation. The literature reviewed thus far has been clear about the potential challenges we may face by incorporating portfolios into our program. For example, we anticipate that ensuring grading consistency with this alternative assessment strategy can prove problematic, as can establishing the expectation that students honestly reflect on their learning rather than report back only what they think we want to hear (Scanlan & Heiden, 1996). We concur with the recommendation of Scanlan & Heiden that developing an evaluation rubric will address this issue by explicitly communicating our evaluation criteria to students early in the program. Genuine faculty participation with and commitment to the benefits of portfolio assessment, consistently communicated to students, should also invite more honest student participation. Another barrier we expect is the additional time commitment required from both students and faculty advisors to assemble the portfolios concurrently with fulfilling project requirements for individual courses (McKinney, 1998). Our goal of consistently addressing portfolio format and content as a component of each of our courses will, we believe, make the necessary time commitment more manageable and ultimately worthwhile. Our exploration of possible solutions to these and other perceived and anticipated obstacles will continue. We are convinced, however, that the authentic assessment and related benefits possible through the use of Web-based portfolios are much too advantageous to ignore.

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